IN THE CLAIMS

1. (Currently amended) A method of discovering services available in accordance with an information network, comprising the steps of:

obtaining a request from a client to perform a search for one or more services;

searching a set of one or more service description documents, based on the client request, wherein the searching step further comprises automatically determining one or more changed service description documents in the set of one or more service description documents ~~by detecting~~ via automatic detection of changes in one or more attributes of the one or more changed service description documents, and automatically collecting at least a portion of the one or more changed service description documents, wherein the searching step is configurable to be performed ~~at different levels of~~ to a user-specified maximum level of granularity; and

making a result of the search available to the client.

2. (Previously presented) The method of claim 1, wherein the determining step further comprises comparing at least a portion of a current instance of the set of one or more service description documents to at least a portion of a previous instance of the set of one or more service description documents.

3. (Original) The method of claim 2, wherein at least a portion of the previous instance of the set of one or more service description documents is stored in a cache.

4. (Original) The method of claim 2, wherein at least a portion of the current instance of the set of one or more service description documents is used to update a cache.

5. (Previously presented) The method of claim 1, further comprising the step of aggregating a plurality of result sets obtained during the searching step into an aggregated result, and then making the aggregated result available to the client.

6. (Previously presented) The method of claim 5, wherein the plurality of result sets comprise services obtained during the searching step.

7. (Original) The method of claim 1, further comprising the step of obtaining information used to control performance of the searching step.

8. (Original) The method of claim 1, wherein the searching step is performed in association with multiple data sources.

9. (Canceled)

10. (Original) The method of claim 1, wherein the one or more services comprise one or more web services.

11. (Withdrawn) A method of querying one or more service description documents, comprising the steps of:

receiving at least one query;

identifying a target data source for the at least one query; and

exploring the target data source with at least one service description document.

12. (Withdrawn) The method of claim 11, wherein the at least one query comprises at least one location of a service description document.

13. (Withdrawn) The method of claim 11, wherein the at least one query can be expressed in terms of one or more of: (i) an extensible markup language; (ii) a HyperText Transport Protocol request string; (iii) one or more input parameters in an application programming interface; and (iv) a form comprising at least one of a location of a service description document and a search criterion.

14. (Withdrawn) The method of claim 11, wherein the target data source comprises at least one of: (i) at least one service description document with zero or more traverse links to other service description documents; and (ii) a service container.

15. (Currently amended) Apparatus for discovering services available in accordance with an information network, comprising:

a memory; and

at least one processor coupled to the memory and operative to: (i) obtain a request from a client to perform a search for one or more services; (ii) search a set of one or more service description documents, based on the client request, wherein the searching step further comprises automatically determining one or more changed service description documents in the set of one or more service description documents ~~by detecting~~ via automatic detection of changes in one or more attributes of the one or more changed service description documents, and automatically collecting at least a portion of the one or more changed service description documents, wherein the searching step is configurable to be performed ~~at different levels of~~ to a user-specified maximum level of granularity; and (iii) make a result of the search available to the client.

16. (Previously presented) The apparatus of claim 16, wherein the determining operation further comprises comparing at least a portion of a current instance of the set of one or more service description documents to at least a portion of a previous instance of the set of one or more service description documents.

17. (Original) The apparatus of claim 16, wherein at least a portion of the previous instance of the set of one or more service description documents is stored in a cache associated with the memory.

18. (Original) The apparatus of claim 16, wherein at least a portion of the current instance of the set of one or more service description documents is used to update a cache associated with the memory.

19. (Previously presented) The apparatus of claim 15, wherein the at least one processor is further operative to aggregate a plurality of result sets obtained during the searching step into an aggregated result, and then making the aggregated result available to the client.

20. (Previously presented) The apparatus of claim 19, wherein the plurality of result sets comprise services obtained during the searching operation.

21. (Original) The apparatus of claim 15, wherein the at least one processor is further operative to obtain information used to control performance of the searching operation.

22. (Original) The apparatus of claim 15, wherein the searching operation is performed in association with multiple data sources.

23. (Canceled)

24. (Original) The apparatus of claim 15, wherein the one or more services comprise one or more web services.

25. (Currently amended) An article of manufacture for discovering services available in accordance with an information network, comprising a machine readable medium containing one or more programs which when executed implement the steps of:

obtaining a request from a client to perform a search for one or more services;

searching a set of one or more service description documents, based on the client request, wherein the searching step further comprises automatically determining one or more changed service description documents in the set of one or more service description documents ~~by detecting~~ via automatic detection of changes in one or more attributes of the one or more changed service description documents, and automatically collecting at least a portion of the one or more changed service description documents, wherein the searching step is configurable to be performed ~~at different levels of~~ to a user-specified maximum level of granularity; and

making a result of the search available to the client.

26. (Withdrawn) A system for automatic exploration of one or more multi-level service description document chains, comprising:

a service container containing at least one cached web service;

a chain change detection module to detect changes in service description document chains; and

a service description document exploration engine coupled to the service container and the chain change detection module for performing automatic exploration of multi-level service description document chains.

27. (Withdrawn) The system of claim 26, further comprising one or more control parameters to control operation of the service description document exploration engine.

28. (Withdrawn) The system of claim 26, wherein the service container comprises at least one of: (i) cached information about one or more web services referenced in at least one service description document chain; (ii) service description document chain information including at least the location of at least one service description document; and (iii) utilities to update and maintain the cached content.

29. (Withdrawn) The system of claim 28, wherein the cached information for each web service found in the service description document chain further comprises at least one of: (i) a service description document name/URL; (ii) a service name; (iii) an abstract; (iv) a WSDL location; and (iv) one or more category descriptions.

30. (Withdrawn) The system of claim 28, wherein the cached information for each service description document chain comprises at least one of: (i) a creation time; (ii) a document size; (iii) a URL or service description document location; and (iv) other signatures of a service description document.

31. (Withdrawn) The system of claim 26, wherein the chain change detection module performs one of a time-initiated checking operation and an on-demand checking operation.

32. (Withdrawn) The system of claim 27, wherein the one or more control parameters

comprise one or more parameters for controlling: (i) a maximum depth to traverse; (ii) turning caching on or off; (iii) target data source display data; (iv) a stopping condition for performing chain change detection; and (v) a determination of which data source is to be a target data source.

33. (Withdrawn) The system of claim 26, wherein the system serves as a web services search agent.

34. (Withdrawn) A method of creating a service description document chain, comprising the steps of:

collecting a set of published service description documents by using one of a manual search and an automated search engine application programming interface;

linking related service description documents to form a service description document chain;

invoking a chain change detection process to collect changes to the service description documents in the chain and then invoking a service description document exploration process to explore the chain; and

storing results of the processes in a cache.

35. (Currently amended) A method for providing a service, in accordance with a service provider, to allow discovery of services available in accordance with an information network, the method comprising the step of:

deploying a service discovery system operative to: (i) obtain a request from a client to perform a search for one or more services; (ii) search a set of one or more service description documents, based on the client request, wherein the searching step further comprises automatically determining one or more changed service description documents in the set of one or more service description documents ~~by detecting~~ via automatic detection of changes in one or more attributes of the one or more changed service description documents, and automatically collecting at least a portion of the one or more changed service description documents, wherein the searching step is configurable to be performed ~~at different levels of~~ to a user-specified maximum level of granularity; and (iii) make a result of the search available to the client.